



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,256	06/24/2003	Leo Zhaoqing Liu	RHODIA.02035 us	4513

110 7590 01/04/2006

DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307

EXAMINER

MCCLENDON, SANZA L

ART UNIT PAPER NUMBER

1711

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

10

Office Action Summary	Application No. 10/606,256	Applicant(s) LIU ET AL.	
	Examiner Sanza L. McClendon	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/13/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8 is/are allowed.
- 6) ☒ Claim(s) 10-12 and 14-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1711

DETAILED ACTION

Response to Amendment

1. In response to the Amendment received on October 13, 2005, the examiner has carefully considered the amendments. The examiner acknowledges the cancellation of claims 9 and 13. The claim rejection under 35 U.S.C. § 112, 2nd paragraph for claims 2-5 and 9-13 have been overcome by the remarks, stating that the molecular weight of the claims is intended to be the Mw, and has hereby been withdrawn for consideration.

Response to Arguments

2. Applicant's arguments with respect to claims 10-12 and 14-16 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10-12 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horton in view of Magallanes et al (6,884,884).

Horton teaches prepackaged crosslinked polymers capable upon hydration for use usage as a fracturing fluid. Said mixture includes a polysaccharide, a crosslinking agent and a pH-adjusting agent to facilitate the crosslinking reaction. Said mix is hydrated while being pumped and reaches maximum viscosity in the formation, such as an oil well. It is taught that the gelling composition is a solvatable polysaccharide having a molecular weight of at least about 100,000 and include those polysaccharides found in column

Art Unit: 1711

3, lines 55 to column 4, lines 5. Said crosslinking agents contain polyvalent metal ions and is most preferably zirconium acetal acetate. This anticipates at least one crosslinking agent in claim 11. Horton teaches propping agents, such as sand bauxite and other particulate materials can be added to the dry mixture. Said dry mix is added to an aqueous stream as it is pumped into the well, where rapid hydration is facilitated by the turbulence of the material in the bore well. Per example 13, Horton teaches hydration takes place within less than 30 seconds.

Horton does not expressly teach a galactomannan having polydispersity of below 3.0. However oil well fracturing agents using galactomannan having a polydispersity from 1-8 are known, such as found in Magallanes et al. Magallanes et al teaches methods of depolymerizing galactomannan and derivatives thereof and uses of such compounds. Magallanes et al teaches said depolymerized compounds make unexpectedly better fluids for treating and/or making subterranean fractures, such as by increasing the conductivity of liquids and materials through the use of a proppant pack—see column 6, lines 58-62. Per table 2, Magallanes et al teaches a sample 293H that has a polydispersity of 2.97.

Horton and Magallanes et al are analogous are because they are from the same field of endeavor that is the art of fracturing compositions. Therefore, it would have been obvious for an artisan of ordinary skill in the art to modify the invention of Horton with the depolymerized galactomannan of Magallanes et al. The motivation would have been a reasonable expectation of successfully obtaining the advantages of the fracturing composition as taught by Magallanes et al—see column 6, line 58-62.

EXAMINER'S AMENDMENT

5. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In claim 10, please insert before the word "agent" the word "crosslinking".

Art Unit: 1711

Note: This examiner's amendment was authorized by applicant on June 1, 2005 for claim 9 to overcome the "antecedent basis" rejection as discussed. Applicant has cancelled claim 9 and amended claim 10 to include the limitation of claim 9. However applicant failed to include the examiner's amendment inserting the word "crosslinking".

Allowable Subject Matter

1. Claims 1-8 are allowed.
2. The following is an examiner's statement of reasons for allowance: The prior art taken alone or in combination, does not fairly suggest or disclose the instantly claimed method of depolymerization of the claimed polysaccharides by exposure to radiation consisting essentially of electron beams. Accordingly the invention of instant claims 1-8 are allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L. McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1711

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sanza L. McClendon
Examiner

Art Unit 1711

SMc